

# Storm Data and Unusual Weather Phenomena

June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
<b>INDIANA, Northeast</b>									
Pulaski County Medaryville	11	1803EST TIME ESTIMATED			0	0			Hail (1.75)
Pulaski County 4 S Denham	11	1815EST			0	0			Hail (0.75)
Pulaski County Ripley to Monterey	11	1828EST	9	100	0	1	1M	100K	Tornado (F2)  4 TRAILER HOMES DESTROYED, SEVERAL OTHERS SUFFERED MINOR TO MAJOR DAMAGE, ONE HOME AND BARN DESTROYED, SEVERAL OTHER HOMES SUFFERED MODERATE DAMAGE. TORNADO STARTED IN RIPLEY AND TRACKED EAST NORTHEAST TO MONTEREY BEFORE IT LIFTED. EXTENSIVE TREE DAMAGE OCCURRED ALONG THE TORNADOES PATH.
Starke County 2 S Bass Lake	11	1834EST			0	0	0		Thunderstorm Wind  NUMEROUS TREE LIMBS DOWN
Marshall County 3 SW Plymouth	11	1903EST			0	0	0		Thunderstorm Wind  NUMEROUS TREE LIMBS DOWN
Grant County 2.5 SW Swayzee	11	1921EST	6	100	0	0	500K		Tornado (F1)  THIS TORNADO WAS A CONTINUATION OF THE GREENTOWN TORNADO IN HOWARD COUNTY. THE TORNADO WAS WEAKENING AS IT CROSSED INTO GRANT COUNTY BUT CAUSED EXTENSIVE TREE DAMAGE ALONG ITS PATH AND SEVERLY DAMAGED SEVERAL HOMES IN SWAYZEE. MANY OF THE HOMES SUFFERED DAMAGE FROM UPROOTED TREES FALLING ON THEM. MANY TREES AND POWER LINES WERE REPORTED DOWN FROM THIS SERIES OF STORMS. IN ADDITION...VERY HEAVY RAIN CAUSED FLASH FLOODING ACROSS THE COUNTY WITH MANY COUNTY ROADS WASHED OUT OR UNDER WATER.
Kosciusko County 3 NE Etna Green to 5 NE Etna Green	11	1933EST	2	100	0	4	800K		Tornado (F1)  THIS WAS ANOTHER TORNADO SPAWNED FROM THE SAME TORNADIC SUPERCELL THAT CAUSED DAMAGE IN PULASKI COUNTY EARLIER IN THE EVENING. 30 MOBILE HOMES AT THE MIKEL MOBILE ESTATES WERE DAMAGED, MANY SEVERELY. SOME WERE SIMPLY OVERTURNED WHILE OTHERS WERE COMPLETELY FLATTENED. 4 PEOPLE SUSTAINED MINOR INJURIES.
Elkhart County New Paris	11	1949EST			0	0	0		Thunderstorm Wind  NUMEROUS TREE LIMBS DOWN
Grant County 3 SE Fairmount	11	1958EST	4	200	0	0	1M		Tornado (F1)  THIS TORNADO TRACK WAS A CONTINUATION OF THE TORNADO WHICH BEGAN NEAR THE TOWN OF ELWOOD IN MADISON COUNTY. THE TORNADO WAS WEAKENING AS IT CROSSED INTO GRANT COUNTY BUT CAUSED EXTENSIVE DAMAGE TO SEVERAL FARMS. ONE FARMSTEAD SUFFERED A DESTROYED BARN AND AN OVERTURNED JUNK BUS. ANOTHER FARMSTEAD HAD A VERY LARGE METAL OUTBUILDING DESTROYED AND 3 LARGE SILOS WERE BLOWN INTO THE FARM HOUSE WHICH SUFFERED MAJOR DAMAGE. ANOTHER FARM LOST MOST OF ITS OUTBUILDINGS WITH THE ROOF OF THE HOUSE DAMAGED. ANOTHER FARM NEAR FAIRMOUNT SUFFERED SEVERE DAMAGE WITH 2 BARNES DESTROYED AND THE HOUSE LOST ITS ROOF. MANY TREES AND OUTBUILDINGS IN FOWLERTON WERE DAMAGED WHEN THE TORNADO FINALLY LIFTED.
Wells County 1.5 SW Poneto to .5 SW Poneto	11	2134EST	1	50	0	0	150K		Tornado (F1)  THIS WAS ONE OF SEVERAL TORNADOES PRODUCED FROM THE SAME SUPERCELL THAT DEVELOPED ACROSS HOWARD COUNTY. THIS BRIEF SPINUP CAUSED EXTENSIVE DAMAGE TO ALL OUTBUILDINGS ON ONE FARM, 2 FARM HOMES SUFFERED EXTENSIVE DAMAGE, 5 OTHER HOMES SUFFERED MINOR TO MODERATE STRUCTURAL DAMAGE.

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## INDIANA, Northeast

### Jay County

2 SW Boundary City to Boundary City 11 2140EST 2 50 0 0 300K Tornado (F1)

THIS TORNADO COMPLETELY DESTROYED A NEW MODULAR HOME. RIGHT ACROSS THE ROAD...TWO OTHER HOUSES WERE DAMAGED AND A BARN WAS DESTROYED. SEVERAL OTHER HOMES, AN OLD SCHOOL, AND A CHURCH SUFFERED MINOR TO MODERATE DAMAGE. MANY TREES AND POWER LINES WERE DOWN AS A RESULT OF THIS STORM.

### Adams County

Monroe 11 2155EST 0 0 Hail (0.75)

### Adams County

Monroe 11 2155EST 0 0 30K Thunderstorm Wind

HIGH WINDS DESTROYED A BARN AND DESTROYED SEVERAL TREES

Synoptic and mesoscale conditions for June 11, 1998...

Morning sfc and upper air analysis revealed a potent upper short wave trough across North Dakota with an intensifying area of sfc low pressure across southwest Kansas. An unseasonably strong 140 knot jet streak was ejecting out of this trough across Kansas with the left front exit region progged into central Indiana after 18Z. Increasing moisture convergence and theta-e advection along the northward lifting warmfront was seen as 850 mb winds were forecast to increase to 55 knots. By 21Z, the sfc low had moved into eastern Iowa and deepened to 994 mb. The prestorm environment was characterized by moderate to extreme instability (LI values -7 to -9 and CAPE values in excess of 2000 J/kg) with temperatures in the lower 80s and dewpoints in the low/mid 70s. This combined with a dry punch at 700mb and deep layer shear along the warm front, where storm relative helicity values increased to 400 M2/S2, lay the foundation for an outbreak of damaging tornadoes across Indiana.

### Starke County

North Judson 12 1504EST 0 0 Thunderstorm Wind (G61)

### Noble County

Wolflake 12 1505EST 0 0 Hail (1.75)

### Noble County

5 E Rome City 12 1510EST 0 0 Hail (0.75)

### Noble County

Burr Oak 12 1512EST 0 0 Hail (1.75)

### Marshall County

Bourbon 12 1513EST 0 0 Hail (1.00)

### Starke County

Knox 12 1544EST 0 0 Hail (0.75)

### Steuben County

Hamilton 12 1545EST 0 0 Hail (0.75)

### Whitley County

Tri Lakes 12 1545EST 0 0 Hail (1.00)

### De Kalb County

Auburn 12 1549EST 0 0 Hail (0.75)

### Kosciusko County

6 SE North Webster 12 1550EST 0 0 Hail (1.00)

### Whitley County

Churubusco 12 1556EST 0 0 Hail (1.75)

### Grant County

2 S Marion 12 1600EST 0 0 Hail (1.75)

### Noble County

Merriam 12 1603EST 0 0 Hail (1.75)

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<b>INDIANA, Northeast</b>									
Whitley County Tri Lakes	12	1605EST			0	0			Hail (4.00)
Noble County 5 S Albion	12	1615EST			0	0			Hail (1.75)
La Porte County 6 S Westville	12	1617EST	0.1	50	0	0	50K		Tornado (F0) WEAK TORNADO TOUCHED DOWN NEAR U.S. 421 AND U.S. 30. A FEW FARMHOUSES SUFFERED SLIGHT ROOF DAMAGE.
St. Joseph County South Bend	12	1622EST			0	0			Hail (1.75)
Kosciusko County Mentone	12	1630EST			0	0			Hail (1.00)
Kosciusko County Mentone	12	1630EST			0	0	250K		Thunderstorm Wind MANY LARGE TREES WERE BLOWN DOWN THROUGHOUT TOWN. SEVERAL HOUSES SUSTAINED MINOR TO MODERATE STRUCTURAL DAMAGE.
Whitley County 2 E South Whitley to South Whitley	12	1634EST			0	0			Hail (1.75)
Allen County Wallen	12	1635EST			0	0			Hail (1.75)
Elkhart County 1 S Elkhart	12	1640EST			0	0			Hail (0.75)
Allen County Wallen	12	1648EST			0	0			Thunderstorm Wind (G65)
Elkhart County Elkhart	12	1703EST			0	0			Hail (1.25) ALONG COUNTY ROAD 30.
Allen County Ft Wayne	12	1725EST			0	0			Hail (0.75)
Allen County Ft Wayne	12	1735EST			0	0			Hail (0.75)
La Porte County Michigan City	18	2155EST			0	0	0		Thunderstorm Wind LARGE TREES BLOWN DOWN
La Porte County Michigan City	18	2156EST			0	0			Thunderstorm Wind (G55) COAST GUARD STATION REPORT
La Porte County La Porte	18	2205EST			0	0	0		Thunderstorm Wind LARGE TREES BLOWN DOWN
St. Joseph County New Carlisle	18	2206EST			0	0	0		Thunderstorm Wind LARGE TREES BLOWN DOWN
St. Joseph County South Bend	18	2235EST			0	0	0		Thunderstorm Wind TREES DOWN

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<b>INDIANA, Northeast</b>									
<b>Marshall County</b>									
<b>Plymouth</b>	<b>18</b>	<b>2240EST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Thunderstorm Wind</b>
									NUMEROUS TREES DOWN IN TOWN AND ACROSS THE COUNTY. SEVERAL ROADS WERE BLOCKED DUE TO FALLEN TREES AND DOWNED POWER LINES.
<b>Elkhart County</b>									
<b>Wakarusa</b>	<b>18</b>	<b>2255EST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G52)</b>
<b>Kosciusko County</b>									
<b>Barbee</b>	<b>18</b>	<b>2255EST</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>Thunderstorm Wind</b>
									TREE LIMBS AND POWER LINES DOWN.
<b>Wabash County</b>									
<b>North Manchester</b>	<b>18</b>	<b>2340EST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G61)</b>
<b>Huntington County</b>									
<b>Huntington</b>	<b>19</b>	<b>0015EST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G55)</b>
									SEVERAL TREES DOWN WITH MINOR ROOF DAMAGE TO SEVERAL HOMES.
<b>Wells County</b>									
<b>Ossian</b>	<b>19</b>	<b>0025EST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
									SEVERAL LARGE TREES WERE TOPPLED IN TOWN.
<b>Allen County</b>									
<b>Ft Wayne</b>	<b>19</b>	<b>0035EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
<b>Blackford County</b>									
<b>Hartford City</b>	<b>19</b>	<b>0045EST</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>Thunderstorm Wind</b>
									NUMEROUS TREES DOWN ACROSS COUNTY
<b>Adams County</b>									
<b>Berne</b>	<b>19</b>	<b>0050EST</b>			<b>0</b>	<b>0</b>	<b>100K</b>		<b>Thunderstorm Wind (G52)</b>
									MANY TREES AND POWER LINES WERE DOWN ACROSS THE COUNTY. ONE TREE FLATTENED TWO CARS IN DECATUR WITH THE LIBRARY IN BERNE LOSING PART OF ITS ROOF.
<b>Jay County</b>									
<b>Portland</b>	<b>19</b>	<b>0050EST</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>Thunderstorm Wind</b>
									NUMEROUS TREES DOWN ACROSS COUNTY
<b>Steuben County</b>									
<b>Angola</b>	<b>26</b>	<b>0115EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
<b>INZ004</b>									
	<b>26</b>	<b>0150EST</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>Flood</b>
									BRIDGE REPORTED UNDER WATER IN NEW CARLISLE.
<b>Allen County</b>									
<b>Poe</b>	<b>26</b>	<b>1735EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
<b>Adams County</b>									
<b>Decatur</b>	<b>26</b>	<b>1803EST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G52)</b>
<b>Fulton County</b>									
<b>Leiters Ford to Rochester</b>	<b>28</b>	<b>2115EST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.75)</b>
<b>Fulton County</b>									
<b>Talma</b>	<b>28</b>	<b>2115EST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.00)</b>
<b>INZ034</b>									
	<b>29</b>	<b>0120EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
									SEVERAL ROADS WERE REPORTED UNDER WATER IN THE TOWN OF PORTLAND.
<b>Jay County</b>									
<b>Portland</b>	<b>29</b>	<b>0120EST</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>Thunderstorm Wind</b>

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<b><u>INDIANA, Northeast</u></b>									
			NUMEROUS TREES WERE BLOWN DOWN IN THE CITY.						
<b>La Porte County</b>									
La Porte	29	1900EST			0	0			Hail (1.00)
<b>Elkhart County</b>									
Elkhart	29	1922EST			0	0			Hail (0.75)
<b>St. Joseph County</b>									
Osceola	29	1922EST			0	0			Hail (1.00)
			SEVERAL TREES DOWN IN TOWN.						
<b>Lagrange County</b>									
Mongo	29	1934EST			0	0			Hail (0.75)
<b>Marshall County</b>									
Culver	29	1945EST			0	0	0		Thunderstorm Wind
			NUMEROUS TREES BLOWN DOWN IN TOWN WITH SEVERAL POWER OUTAGES REPORTED.						
<b>Kosciusko County</b>									
Warsaw	29	2035EST			0	0	0		Thunderstorm Wind
			SEVERAL TREES AND POWER LINES DOWN IN CITY.						
<b>Allen County</b>									
Ft Wayne	29	2045EST			0	0			Thunderstorm Wind (G50)
<b><u>MICHIGAN, Extreme Southwest</u></b>									
<b>Berrien County</b>									
Stevensville	18	2210EST			0	0	0		Thunderstorm Wind
			TREES BLOWN DOWN ON THE EAST SIDE OF TOWN.						
<b>Cass County</b>									
Dowagiac to Cassopolis	18	2215EST			0	0	25K		Thunderstorm Wind
			NUMEROUS TREES AND POWER LINES BLOWN DOWN.						
<b>St. Joseph County</b>									
Colon	25	1934EST			0	0			Hail (1.75)
<b>St. Joseph County</b>									
White Pigeon	25	2320EST			0	0			Thunderstorm Wind (G52)
<b>Berrien County</b>									
Galien	26	0040EST			0	0	0		Thunderstorm Wind
			6 INCH TREE LIMBS BLOWN DOWN.						
<b>Branch County</b>									
Coldwater	26	0100EST			0	0	0		Thunderstorm Wind
			SEVERAL TREES BLOWN DOWN ACROSS COUNTY.						
<b>Branch County</b>									
Coldwater	26	0500EST			0	0			Hail (1.00)
			QUARTER SIZE HAIL COVERED THE GROUND.						
<b>Branch County</b>									
Quincy	26	0500EST			0	0			Hail (0.88)
<b>Hillsdale County</b>									
Camden	26	0520EST			0	0			Hail (0.88)

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## OHIO, Northwest

### Van Wert County

**Scott**      **12**      **1713EST**                **0**      **0**                **Thunderstorm Wind (G70)**

### Paulding County

**Antwerp**      **12**      **1715EST**                **0**      **0**      **10K**           **Thunderstorm Wind**  
MANY TREES BLOWN DOWN INCLUDING ONE 2 FEET IN DIAMETER

### Paulding County

**Paulding**      **12**      **1715EST**                **0**      **0**                **Hail (1.00)**  
ONE INCH HAIL FELL THROUGHOUT COUNTY

### Putnam County

**Ottoville**      **12**      **1745EST**                **0**      **0**      **100K**           **Thunderstorm Wind (G52)**  
60 M PH WIND GUSTS REPORTED ACROSS COUNTY. NUMEROUS LARGE TREES AND LIMBS WERE BLOWN DOWN WITH DAMAGE TO VEHICLES AND HOUSES.

### OHZ015

#### Paulding

**12**      **1925EST**                **0**      **0**                **Flood**  
SEVERAL COUNTY ROADS WERE UNDER WATER.

Synoptic and mesoscale conditions for June 12, 1998...

Strong upper shortwave was progged to dig sharply across the lower great lakes during the day in response to 120 meter height rises across the central plains. Increasing upper divergence associated with a 110 knot 250 mb jet and impressive upper forcing in advance of mid level cold pool led to rapid destabilization across Indiana by afternoon. With Capes increasing to 3000 J/kg and Lifted Indices to -10, the atmosphere was primed for severe weather. A weak surface cold front moving across the area in the afternoon provided the needed low level convergence for convection to develop. Shear values were mainly unidirectional with impressive mid level flow of 50 knots. Severe storms rapidly developed along the sfc boundary around 300 pm EST. Only one tornado was reported but many of the storms produced large hail up to the size of grapefruits and 60 to 80 mph wind gusts. Crop damage was widespread with some fields completely destroyed. Many homes suffered damage to varying degree due to downed tree limbs and uprooted trees.

### Williams County

**Bryan**      **19**      **0050EST**                **0**      **0**      **0**           **Thunderstorm Wind**  
TREES DOWN ACROSS COUNTY.

### Paulding County

**Latty to Paulding**      **19**      **0100EST**                **0**      **0**      **100K**           **Thunderstorm Wind**  
WIDESPREAD WIND DAMAGE ACROSS THE COUNTY. 18 POWER POLES WERE BLOWN DOWN IN ONE STRETCH ALONG CR 107.

### Fulton County

**Fayette**      **19**      **0125EST**                **0**      **0**                **Hail (0.75)**

### Fulton County

**Wauseon**      **19**      **0125EST**                **0**      **0**      **0**           **Thunderstorm Wind**  
TREES DOWN ACROSS THE COUNTY.

### Putnam County

**Columbus Grove**      **19**      **0140EST**                **0**      **0**                **Thunderstorm Wind (G53)**

Synoptic and mesoscale conditions for June 18/19, 1998...

A large upper level ridge was in place across the central plains states the morning of the 18th with an upper level trough axis anchored across the eastern Great Lakes region. An unseasonably strong shortwave trough was forecast to crest the upper ridge axis and dive southeast across the midwest during the afternoon and night of the 18th. At the sfc, a warm front was lifting northward with low pressure developing across eastern South Dakota. This surface low was forecast to track into central Wisconsin by evening as a 60 knot low level jet developed in response to a coupled 250 mb jet streak structure. A mid level capping inversion inhibited convection during the day but with the approach of the mid level trough and cold pool, steep mid level lapse rates developed with 700 to 500 mb delta T of 20 degrees Celsius. Rich boundary layer moisture began to pool along the warm front in the afternoon with surface dewpoints climbing into the lower 80s across central and eastern Iowa where severe convection first initiated. Dry air punching in behind this system and favorable storm relative shear provided a balanced cool pool/ambient shear interaction which

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					Killed	Injured	Property	Crops	

## OHIO, Northwest

maintained this long lived severe convective system.

A large squall line know as a derecheo developed across central Iowa during the afternoon of the 18th and rapidly propagated eastward along and south of the warm front. Wind damage... large hail and very heavy rains were common from Iowa east into Ohio were the squall line weakened during the morning hours of the 19th. Damage across Indiana, Michigan and Ohio was primarily due to strong straight line winds from 60 to 80 mph which downed many trees and power lines.

<b>Van Wert County</b>									
2.5 SW Convoy	26	1800EST			0	0			Thunderstorm Wind (G50)
<b>Henry County</b>									
Mc Clure	27	1605EST			0	0			Hail (1.00)
<b>Putnam County</b>									
Columbus Grove	27	1753EST			0	0			Hail (0.88)
<b>Allen County</b>									
Lima	27	2050EST			0	0			Hail (1.75)
<b>Putnam County</b>									
Columbus Grove	29	1334EST			0	0			Hail (0.75)
<b>Putnam County</b>									
Columbus Grove	29	1334EST			0	0			Thunderstorm Wind (G53)
<b>Putnam County</b>									
Leipsic	29	1354EST			0	0			Hail (1.00)
<b>Putnam County</b>									
Leipsic	29	1354EST			0	0			Thunderstorm Wind (G61)